

BURNING REFUSE

1. SCOPE

This work shall consist of furnishing all equipment and labor necessary to excavate and extinguish burning refuse as shown on the Drawings and as directed by the ENGINEER.

2. MATERIALS

2.1. Water: Have a minimum of 10,000 gallons of water available on site with a delivery system capable of an application pressure of 100 psi (min.) at the fog or adjustable nozzle and a minimum flow rate of 200 gallons per minute. Maintain a water reserve on site 24-hrs a day during all phases of the extinguishing process.

2.2. Wetting Agent Concentrate: Wetting agent concentrate shall be Cold Fire or an approved equivalent. The ENGINEER must pre-approve in advanced the utilization of wetting agent.

Create a 10% solution (10 parts water to 1 part wetting agent concentrate) and provide equipment and labor to maintain a minimum of 2,500 gallons of wetting agent solution and provide a delivery system capable of application pressure of 100 psi minimum and a minimum flow rate of 250 gpm. Pre-mix the solution in tanks. Induction method will not be acceptable. The ENGINEER may approve other solution percentages.

3. SAFETY

All materials extinguished shall be unclassified. Use extreme caution when working in the burning refuse area. Anticipate that the majority of material will be burning. The burning material may be in large pocket masses and/or veins of burning refuse which may extend into otherwise non-burning areas. In addition, large unstable voids may exist within this area, which may have low bearing capacity. Expect open flames, smoke, dust, and, gas during the extinguishing process. Burning refuse produces gases such as methane, carbon monoxide, hydrogen sulfide, and hydrogen. Monitor these as well as the possibility of explosions due to gas, steam, and dust. The Contractor shall take all measures necessary to minimize smoke and dust production that could affect the occupants of the nearby residences or disrupt traffic along local roads.

The Contractor shall obey all Occupational Safety and Health Administration (OSHA) requirements and Mine Safety and Health Administration (MSHA) requirements pertaining to the excavation of coal refuse material. Adhere to all appropriate State and Federal water quality requirements in the performance of the work.

At the end of the workday/workweek, minimize the risk of open flames and/or heavy smoke/dust/gases occurring during non-working hours. Prepare to return to the site during non-working hours if such safety issues arise as directed by the ENGINEER. At no time shall the CONTRACTOR leave the work area with open flames and/or heavy smoke/dust/gases occurring.

Any material found to be in excess of 100 degrees Fahrenheit shall be considered burning material and shall be handled accordingly.

Equipment Operation: Use extreme caution when heavy equipment is operating near or on the burning refuse embankment. Thoroughly examine the work areas prior to moving equipment into the area. Voids may exist in the burning refuse area and should proceed with caution due to potentially low bearing capacity

Safety Monitoring Equipment: Operators and laborers shall be equipped with a self-contained breathing apparatus or oxygen tanks when exposed to direct contact with smoke or noxious fumes. Suspend work whenever encountering harmful amounts of gases or smoke. The Contractor shall have available on site at all times a minimum of two carbon monoxide (CO) detectors and a methane detector and shall check for the gases on a regular basis in areas where equipment operators and other workers might be exposed. The supervisor shall use a MSHA-approved CO detector for these purposes. The equipment operators shall at all times have a CO detector in the cab of the machinery being operated and shall monitor for CO on a constant basis.

Safety Advising: Prior to beginning work each day, the Contractor's onsite supervisor will advise the workers to exercise extreme caution whenever (a) smoke and other emissions change colors, (b) emission rate rapidly increases, (c) unexpected emissions of black clouds, and (d) ground movements are sensed. Immediately correct any hazardous development.

Water Delivery Capability: The Contractor shall be capable of providing a minimum of 200 gallons of water per minute to all work areas during excavation operations unless approved by the ENGINEER. The Contractor shall submit a plan for approval by the ENGINEER for supplying water to the site. The plan shall discuss the method of delivery (i.e., use of fire department), pumping system, and equipment to be used. Submit the plan prior to any construction. Utilize a fog nozzle and/or an adjustable nozzle to deliver the maximum amount of water to the refuse area at any time during excavation. Do not excavate burning refuse until the 2,000-gallon water storage system is in place and tested to be in proper working order.

4. EXTINGUISHING METHODS

The general limits of excavation shown on the Drawings may be adjusted by the ENGINEER within the larger project limits based upon the field-delineated extent of the burning material. Depth of excavation will be native soil or rock.

Apply water with or without wetting agent to the burning refuse material, excavate, and spread out the material and continue to apply water until extinguished or rendered safe by the ENGINEER. Do not remove any material with visible flames. **Any material greater than 100°F is burning**, extinguished is when material is **100°F or less**. No material shall be placed in fill areas with a temperature higher than 100°F and until approval from the ENGINEER has been given. The Resident Inspector will take temperature reading on a regular basis; however, the CONTRACTOR shall ensure no burning material is placed in fill areas. The ENGINEER

reserves the right to spot check any composite material placed in the fill areas to ensure no re-ignition has taken place; this may include requiring the CONTRACTOR to excavate areas for examination and temperature readings. If re-ignition occurs, the CONTRACTOR shall be required to extinguish it as soon as practical.

Mix or isolate any unburned coal removed during excavation in the backfill material to prevent future ignition.

Stockpile burned material on site after extinguishing until it is ready to place in the waste area in 1-foot lifts. Place a minimum 1-foot (2' is preferred) clean soil cover. Do not place extinguished burned material in contact with a coal seam or mine openings.